

The minutes of the meetings of March 29 and April 11 were read and approved.

The first number on the announced scientific program was a paper on "Fern Collecting in Cuba," by Mrs. N. L. Britton. This paper is published in full in the *American Fern Journal*, Vol. I, p. 75.

The next number was a discussion of "Fern Venation," by Miss Margaret Slossen. A more complete discussion of the subject by Miss Slossen may be found in her book "How Ferns Grow."

The meeting then adjourned to the Fern House of the New York Botanical Garden under the guidance of Mrs. N. L. Britton for a further study of ferns.

B. O. DODGE, *Secretary*.

REVIEWS

Hunter's Essentials of Biology and Sharpe's Laboratory Manual in Biology

Essentials of Biology* is the title of a new and fuller book by George William Hunter, designed also apparently to fit the New York City syllabus. It is accompanied by Richard W. Sharpe's Laboratory Manual in Biology.†

Hunter's volume is a great improvement over his earlier book in content, illustration, and correlation of the three subjects, botany, zoölogy and physiology. The problem idea which runs throughout is a good one, but all the subject matter does not lead itself readily to this arrangement (*e. g.*, the patent medicine discussion). Fertilization is not really explained by the text (p. 36) and alternation of generations as treated under mosses can mean nothing until after the following chapter on ferns has been completed. There are also a few misleading statements, such as the storing of proteids for future use (p. 345), the implied "osmosis of starch" (p. 106, p. 356) and that plants absorb only useful substances (p. 32). These graded reference lists are helpful, and the varied illustrations add much to the value of the book.

* Hunter, George William. *Essentials of Biology Presented in Problems*. Pp. 448. American Book Company. 1911.

† Sharpe, Richard W. *A Laboratory Manual for the Solution of Problems in Biology*. Pp. 352. American Book Company. 1911.

The manual is most attractively spaced; and unusually well-illustrated for a laboratory manual. The questions and special reports are varied and interesting. Some of the questions (*e. g.*, on nutrition) seem too difficult; as do one or two of the graphic charts; and ray flowers and petals are confused (p. 31). Some good tables, directions, etc., are included; the clay-pipe charcoal experiment is one of several neat devices.

These books ought to do much to secure sufficient uniformity of treatment of the "syllabus" to enable New York City teachers to estimate its real value. They must also prove a great help to many of the present uncertain interpreters of it and of "nature" and should lead to great improvement in the content and presentation of first-year biology.

JEAN BROADHURST.

OF INTEREST TO TEACHERS*

Professor E. L. Thorndike discusses methods of testing the results of the teaching of science (*School Science and Mathematics*, April). It contains much that is helpful to biology teachers in estimating the results obtained, but only the definite suggestions are quoted here.

"The topic which I am to discuss is one of enormous complexity. The changes in human beings which result from the teaching of science in schools are real, are measurable, and will some day be defined in units of amount as we now define changes in the rate of a moving body or in the density of a gas. But they include thousands of different elements; they vary with every individual; some of them can be demonstrated only long after school is completed; and at present units and scales in which to state changes in knowledge, power, interests, habits and ideals are mostly matters of faith. An adequate measurement of the changes wrought in one class by one course in physics would be a task comparable to a geological survey of a state or an analysis of all the materials in this building."

* Conducted by Miss Jean Broadhurst, Teachers College, Columbia University, N. Y. City.